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primary studies - published RCT

## Inhaled versus systemic antibiotics and airway inflammation in children with cystic fibrosis and Pseudomonas.

**Code:** PM20146365

**Year:** 2010 **Date:** 2010

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### Study design (if review, criteria of inclusion for studies)

RCT

### Participants

Clinically stable CF children with recent Pseudomonas. N=15

### Interventions

4 weeks of inhaled tobramycin or 2 weeks of systemic antibiotics (intravenous ceftazidime and tobramycin).

### Outcome measures

Bronchoalveolar lavage fluid was obtained just before and 4-6 weeks after treatment. The primary outcome was change in % neutrophils in lavage fluid.

### Main results

Fifteen subjects (inhaled = 6, systemic = 9) completed the protocol. Three Systemic Group subjects could not have central venous access established and were treated with oral ciprofloxacin (plus inhaled tobramycin) for 2 weeks as an alternative "systemic" regimen, per protocol. Groups were well matched in age, markers of disease severity, and initial % neutrophils. The Systemic Group showed a modest median change in percent neutrophils (-7%) which was not statistically significant compared to inhaled (+5.4%, P = 0.07). However, the Systemic Group had significantly greater reductions in total cells (-50% vs. -3%, P

### Authors' conclusions

In clinically stable children with CF, systemic antibiotics result in greater short-term reduction in lower airways inflammation than inhaled antibiotics.

<http://dx.doi.org/10.1002/ppul.21176>

### See also

Pediatr Pulmonol. 2010 Mar;45(3):281-90.

### Keywords

Anti-Bacterial Agents; Bacterial Infections; Child; Infant; Infection; Inhalation OR nebulised; Intravenous; pharmacological\_intervention; Pneumonia; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Ceftazidime; Tobramycin; Cephalosporins; Aminoglycosides;